

## REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed December 5, 2003. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

### **Claim Rejections - 35 U.S.C. § 103(a)**

#### **A. Rejection of Claims 1-7 and 27-35**

Claims 1-7 and 27-35 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Stanhope et al. ("Stanhope," U.S. Pat. No. 5,527,597) in view of Hussamy (U.S. Pat. No. 5,215,545) and Johnson et al. ("Johnson," U.S. Pat. No. 4,902,300). Applicant respectfully traverses.

##### **1. Stanhope Does Not Explicitly Disclose a *Blend* of High-Tenacity Fibers and Cellulosic Fibers**

Although the above-described new rejection involves a new combination of references, the rejection reapplys the Stanhope reference as the base reference as in previous Office Actions. In regard to the Stanhope reference, the outstanding Office Action states:

Stanhope describes a mixture or blend of KEVLAR or similar aromatic polyamide fiber and polybenimidazole, (column 4, lines 47-49). Stanhope describes that it will be understood by those in the art that various other flame resistant materials can be used for the blend, (column 4, lines 55-59). Stanhope describes any other flame

resistant material can be used for making fabrics for garments which materials can be with cellulosic fibers with other flame resistant fibers (column 4, lines 47-60).

Unfortunately, the above description of the Stanhope disclosure is not accurate. Although it is true that Stanhope describes a blend of Kevlar and polybenximidazole (PBI), Stanhope simply does not teach or suggest a *blend* of a high-tenacity fiber, such as Kevlar, with a cellulosic fiber. This fact is most clearly apparent when one considers the actual text from the Stanhope reference, which provides (column 4, lines 54+, emphasis added):

However, it also will be understood by those skilled in the art that various other types of flame resistant materials also can be used for the warp yarns *in place of a Kevlar®/PBI blend*. Such additional flame resistant fibrous materials could include: aramids, polynosic rayon, flame resistant cellulosics, . . .

Therefore, as expressed by Applicant in previous Responses, Stanhope only states that other materials could be used *in place of* the Kevlar/PBI blend. In view of the “*in place of*” language, Stanhope only teaches that the other listed materials could be used *instead of* the disclosed Kevlar/PBI blend. What Stanhope does not teach, however, is a blend of high-tenacity fibers, such as Kevlar, and cellulosic fibers, as is required by each of Applicant’s remaining claims. In other words, Stanhope’s mere recital of a list of various materials does not equate to an explicit teaching of Applicant’s explicitly-claimed blend.

Despite Applicant’s repeated attempts to highlight the actual teachings of the Stanhope reference, the Office Action continues to treat Stanhope as if it provides an explicit teaching of a blend of high-tenacity fibers and cellulosic fibers. Given that, as

shown above, the Stanhope reference provides no such teaching, the rejection is flawed, i.e., the rejection assumes as fact an explicit teaching that is not present in the Stanhope reference.

## **2. Stanhope's Disclosure Further Does Not Render a Blend of High-Tenacity Fibers and Cellulosic Fibers Obvious**

Although not argued in the outstanding Office Action, an argument could be made that, given Stanhope's long list of materials, it would have been obvious to a person having ordinary skill in the art to combine one or more of those materials together to form a blend. Such an argument would, however, ignore the underlying realities associated with fabric construction and, more particularly, the underlying difficulties with forming a patterned, flame resistant fabric. Generally speaking, not all materials can be combined with each other to obtain a viable fabric. With specific regard to flame resistant fabrics that are to be patterned, Applicant describes the various obstacles to using a blend of high-tenacity fibers, such as Kevlar, and cellulosic fibers in Applicant's specification.

As described in Applicant's specification, cellulosic fibers are not inherently flame resistant. Applicant's specification, page 5, lines 24-26. To impart the flame resistance needed to obtain an adequately flame resistant fabric, and therefore garment, flame retardants are added to the cellulosic fibers to increase their flame resistance. Applicant's specification, page 5, lines 26-27.

Although the addition of flame retardants is an effective way of increasing the flame resistance of the cellulosic fibers and, therefore, the fabrics in which those fibers are used, the use of such flame retardants complicates the manufacturing process for blends of high-

tenacity fibers and cellulosic fibers (i.e., flame resistant (FR) cellulosic fibers). As described on page 8 of Applicant's specification:

The flame retardants contained in FR cellulosics tend to be depleted by the relatively high temperatures generally considered necessary to affix dye within flame resistant fibers such as para-aramid fibers. The depletion of these flame retardants significantly reduces the flame resistance of the cellulosic fibers and therefore reduces the flame resistance of these blends.

From the above excerpt, it is clear that persons having ordinary skill in the art would be motivated against forming a blend high-tenacity fibers, such as para-aramid fibers, and FR cellulosic fibers in situations in which the blend is going to be dyed and/or printed. Therefore, a mere list of materials that includes high-tenacity fibers and cellulosic fibers would not have rendered obvious combining those fibers to construct a blend that is to be dyed and/or printed on. Without an explicit teaching to the contrary (i.e., an affirmative teaching to combine high-tenacity fibers and cellulosic fibers), the Stanhope disclosure does not render obvious a high-tenacity/cellulosic fiber blend as a fabric that is to be dyed or printed on.

As is further described in Applicant's specification, the Applicant's have determined that, despite the conventional wisdom to the contrary, blends of high-tenacity fibers and FR cellulosic fibers can be dyed and/or printed (with the high-tenacity fibers actually absorbing dye stuff) under certain conditions. As provided in Applicant's specification (pages 8 and 9):

The inventors have discovered that, contrary to conventional beliefs, high tenacity, flame resistant fibers such as para-aramid fibers can be dyed and/or dye printed at temperatures below 100°C if particular dye-assistant are used during fabric processing. Dyeing and/or dye printing at these low temperatures avoids flame retardant depletion. It is this discovery that has led to the determination that a pattern, such as a camouflage pattern, can be formed on a flame resistant fabric by dyeing the high tenacity, flame resistant fibers and the cellulosic fibers a light base shade at a temperature below 100°C, and then printing the remaining colors of the camouflage pattern onto the blend. Processing in this manner, a strong, flame resistant BDU can be produced which substantially satisfies the pattern requirements of the military specifications identified above.

It is through the above-described novel and unobvious process that the claimed fabric can be produced. Given that the process used in its production is novel and unobvious, it logically follows that the resultant fabric is likewise novel and unobvious. In other words, given that the process is novel, the prior art is devoid of the fabric described by independent claims 1 and 30. Furthermore, given that the process is unobvious, it would not have been obvious to create or obtain the fabric described by independent claims 1 and 30. Therefore, Applicant respectfully submits that claims 1 and 30 are presently allowable.

### **3. Neither Hussamy Nor Johnson Provide the Missing Teachings**

In addition to the Stanhope reference, the Office Action cites Hussamy and Johnson in forming the rejection. Applicant notes, however, that neither Hussamy nor Johnson provides a teaching or suggestion to form a blend of high-tenacity fibers and FR

cellulosic fibers. Therefore, the Hussamy and Johnson references fail to remedy the aforementioned deficiencies of the Stanhope reference.

**4. Hussamy Does Not Teach Dyeing or Printing a Blend of High-Tenacity Fibers and FR Cellulosic Fibers**

In addition to failing to teach or suggest blends of high-tenacity and FR cellulosic fibers, Hussamy also fails to teach or suggest dyeing such blends. This is not surprising, however, given the difficulty in dyeing such blends described above. Again, the high temperatures conventionally believed necessary to dye high-tenacity fibers depletes the flame retardants contained in FR cellulosic fibers.

In view of the above, Hussamy's mere teaching regarding dyeing aramid fibers falls far short of rendering Applicant's dyeing and/or printing of high-tenacity/FR cellulosic blends obvious. Simply stated, dyeing aramid fibers without FR cellulosic fibers is significantly different from dyeing or printing on blends of both aramid fibers and cellulosic fibers.

**5. Johnson is Not Relevant to Fabrics That Include High-Tenacity Fibers**

Johnson is added to the rejection for its teachings regarding the use of flame retardant materials. In particular, the Office Action states that it would have been obvious to add the flame retardant materials disclosed by Johnson in the Stanhope fabric.

Applicant notes once more that the applied reference does not discuss blends of high-tenacity fibers and FR cellulosic fibers. Given the special problems involved with

dyeing and/or printing such blends, a mere teaching to use a flame retardant with a cellulosic fabric that does not include high-tenacity fabrics is irrelevant to Applicant's claims.

#### **B. Rejection of Claims 1, 8-9, 34, and 35**

Claims 1, 8-9, 34 and 35 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Stanhope in view of Johnson and Riggins et al. ("Riggins," U.S. Pat. No. 4,898,596). Applicant respectfully traverses the rejection.

Given that the instant rejection, like the rejection described above, uses the Stanhope reference as a base reference, Applicant incorporates the discussion of the applicability (or inapplicability in this case) of that reference provided in the foregoing. To summarize, Stanhope fails to teach blends of high-tenacity fibers and FR cellulosic fibers, and creation of such blends for the purpose of obtaining a patterned fabric would not have been obvious due to conventional wisdom against creating such blends.

The Riggins disclosure is now cited to account for explicitly-claimed dye-assistants. Irrespective of what that disclosure teaches in regard to dye-assistants, Riggins, like Stanhope and Johnson, fails to teach or render obvious a patterned blend of high-tenacity fibers and FR cellulosic fibers. Accordingly, the rejection, as the rejection under Stanhope/Hussamy/Johnson is fatally flawed and cannot render Applicant's claims obvious.

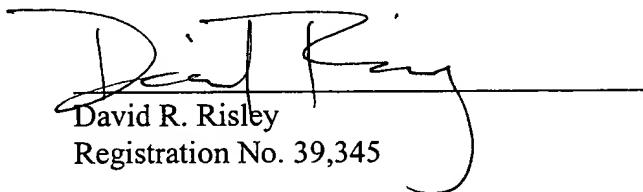
With particular regard to rejected claims 34 and 35, Applicant notes that those claims depend from independent claim 30, which is not rejected under the proffered combination. Accordingly, the rejections of claims 34 and 35 are per se improper.

Regardless, however, Applicant notes that the Stanhope/Johnson/Riggins combination fails to render claim 30 for at least the same reasons discussed above in relation to claim 1.

**CONCLUSION**

Applicant respectfully submits that Applicant's claims 1-9 are presently in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,



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